Report on ISS Oxygen Production, Resupply, and Partial Pressure Management

The majority of oxygen used on International Space Station (ISS) is for metabolic support and denitrogenation procedures prior to Extra-Vehicular Activities. Oxygen is supplied by various visiting vehicles such as the Progress and Shuttle in addition to oxygen production capability on both the United States On-Orbit Segment (USOS) and Russian Segment (RS). To maintain a habitable atmosphere the oxygen partial pressure is controlled between upper and lower bounds. The full range of the allowable oxygen partial pressure along with the increased ISS cabin volume is utilized as a buffer allowing days to pass between oxygen production or direct addition of oxygen to the atmosphere from reserves. This paper summarizes amount of oxygen supplied and produced from all of the sources and describes past experience of managing oxygen partial pressure along with the range of management options available to the ISS.